Appendix I
Future Technical Architecture – Alternative 3

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A. Introduction

Alternative 3 is defined as providing the computer support necessary for the implementation of the new CSR/CB human resource business rules, to be implemented for the 2003-05 biennium, through an approach that combines modification of existing human resource information systems, with partial replacement of existing systems with packaged software.

After researching alternatives, the optimum solution for Alternative 3 was determined to be modification of the existing Payroll System combined with package replacement of the existing Personnel and Leave Systems. The rationale for this decision is contained below:

- The Payroll System is perceived as a system that "works."

- The modifications required of the Personnel and Leave Systems are significantly more numerous than those of the Payroll System.

- Research of consultant intellectual capital and human resource industry information shows that when an organization chooses to only replace a portion of their human resource information systems, they generally choose to replace their Personnel System over their Payroll System.

- The HRISD Personnel and Leave Systems are complex.

- The Payroll System is dependent on the personnel applications for employee, salary, and other essential information required to issue paychecks.

1. Payroll System Modification

This portion of Alternative 3 modifies the existing Payroll System currently operated and supported by HRISD. The Future Technical Architecture provides a conceptual design for meeting that objective, as well as estimated related costs.

2. Personnel System Replacement

This portion of Alternative 3 replaces the existing Personnel and Leave Systems currently operated and supported by HRISD, with a vendor supplied "packaged" solution. The Future Technical Architecture provides a conceptual design for meeting that objective, as well as estimated related costs.

The Future Technical Architecture has been developed without respect to a specific Enterprise Application System (EAS) Human Resource Management System (HRMS) package; instead, it has been developed at a high level and thus could provide the foundation for a more detailed architecture for a baseline implementation of any of the Top Tier EAS packages.

B. Components

The components of the Future Technical Architecture for Alternative 3 are listed below:

- Requirements Gap Analysis

- Conceptual System Design

- Technical Component Requirements

- Organizational Impact

- Estimated Schedule

- Estimated Costs

C. Information Sources

In addition to information already accumulated during the Feasibility Study, information specific to the Future Technical Architecture for Alternative 3 was gathered from the following sources:

- Interviews with DOP, HRISD and DIS managers and staff.

- HRISD information system documentation archives.

- DOP and HRISD work-in-progress documentation.

- Hardware sizing data supplied by the IBM Competency Centers.

- IBM Intellectual Capital gathered from numerous EAS engagements.

II. Requirements Gap Analysis

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A. Introduction

Business requirements related to the HRISD Personnel, Leave, and Payroll information systems to support CSR/CB, were identified in focus group sessions with State employees during the needs assessment portion of the feasibility study. Each requirement identified was given a rating of High (must have), Medium (desired enhancement), or Low (nice to have). Ratings by HRISD system are quantified in Exhibit II-1.

Exhibit II-1: Requirement Ratings by HRISD System

Rating	Personnel	Leave	Payroll	Total
High	159	37	96	292
Medium	13	2	13	28
Low	19	1	1	21
Total:				341

After the requirements were identified and rated, the DOP reviewed the results and determined that 133 of the 341 requirements were necessary for implementation for the 2003-05 biennium. Of these 133 requirements, 36 are payroll requirements and 97 are personnel/leave requirements. All 133 were rated High.

B. Payroll System Modification

1. Approach

The 36 payroll requirements were compared to the capabilities of the current HRISD Personnel and Leave Systems. The comparison process was assisted by 12 HRISD staff members with expertise in human resource business rules, as well as current subsystem functionality. Each requirement was mapped to one or more HRISD subsystem, and designated as being partially or fully supported by current system capabilities, or not supported at all.

2. Gap Analysis Results

The payroll gap analysis effort identified 11 subsystems requiring modification as illustrated in Exhibit II-2.

Exhibit II-2: Subsystems to be Modified

System	Subsystem
Payroll	Generic Pay Feed
	Labor Load (DOT and DOT Marine Division)
	Automatic Warrant Cancellations
	Payroll Calculations
	Main Payroll Reporting (JV, Warrants, Earnings Statements)
	Subsequent Payroll Reporting
	Deduction Reporting
	AFRS/OST Reporting
	Biennium Payroll Reporting
	Year-end Wage Reporting (W-2, 1099, SSA)
General	Data Warehouse

3. Gap Analysis Matrix

Exhibit II-3 contains the Payroll Gap Analysis Matrix illustrating the detailed results of the requirements gap analysis. It contains the 36 payroll requirements necessary to support the 2003-05 biennium implementation of CSR/CB. For ease of comparison, each requirement is identified with the same numbering schema as the Requirements Matrix located in Appendix E.

The current subsystems that support the requirement now or will need to support it in the future, are indicated by the existence of a code in the appropriate subsystem column. The three coded values are defined as follows:

- **F** – Fully supported by the existing subsystem. No modification necessary.

- **P** – Partially supported by existing subsystem. Some modification necessary.

- **N** – Not supported by existing subsystem.

Exhibit II-3: Payroll Gap Analysis Matrix

#		Requirements for 2003-05	Gen Pay Feed	Labor Load	Warr Cancel	Pay Calc	Main Pay Rpt	Sub Pay Rpt	Deduct Rpt	AFRS/OST	Bi Pay Rpt	Year-End	Data Ware
High Priority Requirements – Payroll													
	3.1.0 Manage Time and Attendance Collection												
1	3	Ability to support cost accounting, labor distribution, etc.			P	P	P	P		P			P
2	9	Ability to specify multiple holiday schedules that drive payment of appropriate holiday pay based on the employee's holiday schedule.	N	N		N							
3	10	Ability to support multiple calendars, work types (e.g., telecommuting, comp time, overtime), projects, and work schedules.	N	N		N							
4	11	Ability to support on-call pay.	P	P	P	P	P	P					
5	12	Ability to track which shift worked.	N	P	N	N	N	N					N
6	13	Ability to support continuous 24X7 schedules.	P	P	P	P	P	P					
7	14	Ability to support telecommuting.	N	N	N	N	N	N					P
8	15	Ability to support flexible work schedules.	P	P	P	P	P	P					
	3.2.0 Perform Calculations and Disbursements												
9	1	Ability to support multiple pay cycles.	N	N	N	N	N	N	N	N	N		N
10	2	Ability to accommodate weekly, bi-weekly, semi-monthly, and special payroll runs.	N	N	N	N	N	N	N	N	N		N
11	3	Ability to define multiple work weeks and calculate overtime accordingly.				P							N
12	6	Ability to allow voluntary deductions that are a percentage of an employee's base pay or other bases (up to a maximum).				P							

#		Requirements for 2003-05	Gen Pay Feed	Labor Load	Warr Cancel	Pay Calc	Main Pay Rpt	Sub Pay Rpt	Deduct Rpt	AFRS/OST	Bi Pay Rpt	Year-End	Data Ware
13	11	Ability to deduct or not deduct any given deduction on a special payroll on an employer or employee basis.				P	P	P	P	P			
14	12	Ability to process one-time deductions.				F	F	F	F	F			
15	15	Ability to electronically transmit deductions to appropriate agencies/vendors.							P				
16	19	Ability to allow for accurately handling Section 125 deductions/plans.			P	P	P	P	P	P		P	
17	27	Ability to process and calculate retro pay.	N	N	N	N	N	N	N				
18	28	Ability to calculate shift pay based on employee's base pay or other criteria.	P	P	P	P	P	P					
19	29	Ability to support payment of employee allowances (i.e., car, clothing, etc.)				P	P	P	P				
20	30	Ability to track multiple pay types (regular, overtime, supplemental).	P	P	P	P	P	P					P
21	31	Ability to add new pay types and define how they are used.	N	P	N	N	N	N					P
22	36	Ability to allow 1.0, 1.5, 2.0, etc. overtime pay.	P	P	P	P	P	P					
23	39	Ability to provide a holiday schedule that will automatically pay holiday pay to eligible employees.			N	N	N	N					
24	46	Ability to support compliance with all federal and state legislation for imputed income (taxable fringe benefits).				P	P	P	P			P	
25	47	Ability to provide a gross-up calculation routine. (e.g., grievance award)				N							
26	48	Ability to provide grossed up amounts to be displayed on the employee's earning statement showing gross, taxes, and net with a description.					N						

#		Requirements for 2003-05	Subsystem										
			Gen Pay Feed	Labor Load	Warr Cancel	Pay Calc	Main Pay Rpt	Sub Pay Rpt	Deduct Rpt	AFRS/OST	Bi Pay Rpt	Year-End	Data Ware
27	49	Ability to produce checks on demand.	N	N	N	N	N	N	N	N	N		
28	52	Ability to provide for employer matching contributions.			P	P	P	P					
29	53	Ability to support allowances and appropriate taxing options (ex. Uniform allowance).				P							
30	54	Ability to support mass updates (i.e. COLAs).											
31	59	Ability to add year-to-date fields for W-2's.				N	N	N	N				N	
32	60	Ability for an employee to receive both a 1099 and a W-2.				N	N	N	N		N	N	N	
33	67	Ability to allow State contributions to health, deferred compensation, and other deductions to be computed as either a flat rate, a percentage of gross, or a percentage of employee contributions.				P	P	P	P					
34	70	Ability to support self-pay of benefits for various reasons.					N	N	N					
35	72	Ability to support FLSA calculations and non-FLSA calculations				P							
36	74	Ability to tie payment of OT to appropriate FLSA categorization & calculation.				P							

C. Personnel System Replacement

1. Approach

Since packaged software cannot easily be implemented to meet specific requirements, it was decided to compare *all* Personnel and Leave requirements rated High or "must haves" with the capabilities of Top Tier 'generic' EAS HRMS applications (as opposed to a specific EAS HRMS package).

2. Gap Analysis Results

When the 196 personnel and leave requirements were compared to generic EAS, it appeared that over 95% of the requirements could be met with "out of the box" functionality. A total 126 of the 128 requirements necessary for the 2003-05 implementation of CSR/CB were met, as were 62 of the remaining 68 requirements rated High.

The small percentage of requirements that may not be met with "out of the box" functionality appear to be possible through some fairly minor modifications and work-arounds, none of which should be considered major "customizations" that would impact future upgrades.

In addition, there do not appear to be any gaps in reporting tools or other development tools that would be required as these are included in Top Tier EAS HRMS packages.

The State will need to perform a more detailed gap analysis after the State's CSR/CB business requirements are finalized.

3. Gap Analysis Matrix

Exhibit II-4 contains the Personnel Gap Analysis Matrix illustrating the results of the requirements gap analysis. It contains the 196 Personnel and Leave requirements rated High. For ease of comparison, each requirement is identified with the same numbering schema as the overall needs assessment Requirements Matrix located in Appendix E.

The two columns on the right divide the requirements between those necessary for the 2003-05 biennium implementation and those necessary for the 2005-07 biennium implementation. A "Y" indicates the requirement is fully supported, an "N" indicates it is not. Upon implementation of a generic EAS solution, it is expected that requirements with a "Y" in either column will be immediately supported.

Exhibit II-4: Personnel Gap Analysis Matrix

#		Requirements	2003-05	2005-07
High Priority Requirements – Personnel				
		1.1.0 Manage Human Resources		
1	1	Ability to provide for the current employee self-service capabilities existing in State agencies.		Y
2	2	Ability to provide for current manager self-service capabilities existing in State agencies.		Y
3	3	Ability to support Centralized/Decentralized Human Resources.	Y	
		Ability to capture by effective date:		
4	4	Personal data (name, address, etc.).	Y	
5	5	Emergency contact, medical information, handicap, etc.		Y
6	6	Work history at current and prior agencies (within State government).	Y	
7	7	Current & previous supervisors.		Y
8	8	Education, training, national certifications, licensure (w/ expiration dates).	Y	
9	9	Job classifications.	Y	
10	10	Employment categories (entry level, supervisory, front line, etc.)	Y	
11	11	Salary history.	Y	
12	12	Security clearances.		Y
13	13	Veteran status.		Y
14	14	Memo/Comment fields.		Y
15	15	Disciplinary actions.	Y	
16	16	Languages spoken in addition to English.		Y
17	17	Bargaining unit.	Y	
18	18	Master contract.	Y	
19	19	Employee Status (Seasonal, temp, FT, PT, volunteer, intern, apprentice, in-training).	Y	
20	20	Business unit.	Y	
21	21	Agency-defined fields.		Y
22	22	Employee skills inventory.		Y
23	23	Seniority information.	Y	
24	24	Leaves of absence.		Y
25	25	Reasons for termination.	Y	
26	26	Termination dates.	Y	
27	27	Ability to system-generate a universal employee identification number.	Y	

#		Requirements	2003-05	2005-07
28	28	Ability to check for duplicate social security numbers.	Y	
29	29	Ability to Quick Hire & Terminate (e.g., seasonal firefighters).	Y	
30	30	Ability to track temporary employees nearing certain hours thresholds.	Y	
31	31	Ability to accrue seniority by hours or by dates.	Y	
32	32	Ability to track breaks in service and consider this in calculating years of service.		Y
33	33	Ability to track initial, lateral transfer, and promotional probationary period.	Y	
34	34	Ability to track multiple probationary periods (trial service periods).	Y	
35	35	Ability to transfer an employee to a new location without terminating and rehiring and maintain all history.	Y	
36	36	Ability to track actual physical work location of employees (geographic location).	Y	
37	37	Ability to handle limited term assignments or temporary promotions.	Y	
38	38	Ability to associate employees to multiple locations/agencies.		Y
39	39	Ability to maintain history for a significant number of years (>25) to allow checking for leaves of absence, reasons for termination, termination dates, etc.	Y	
		1.2.0 Perform Organization and Staffing Analysis		
		Ability to provide for the definition of position characteristics such as:		
40	1	Organization.	Y	
41	2	Location (geographic location).	Y	
42	3	Job code and title.	Y	
43	4	Shift and work days.	Y	
44	5	Expenditures and related budget information.	Y	
45	6	Status.	Y	
46	7	Retirement eligible	Y	
47	8	Position evaluation points (e.g., For allocating various positions to certain salary bands).	Y	
48	9	Assignment Pay.	Y	
49	10	Dual language.	Y	
50	11	Selectives.	Y	
51	12	Essential functions.		Y
52	13	Ability to determine qualifications at the Position/Classification Level.		Y
53	14	Ability to support position banding including range/step data if fields populated.	Y	

#		Requirements	2003-05	2005-07
54	15	Ability to support position versus job classifications.	Y	
55	16	Ability to support position grades and steps.	Y	
56	17	Ability to track salary ranges, grades, and steps by effective date.	Y	
57	18	Ability to allow for the use of unique position code assignment to each employee.	Y	
58	19	Ability to create work force composition reports.	Y	
59	20	Ability to establish low/high and median salary scales.	Y	
60	21	Ability to maintain budgeted FTE's as well as salary amounts, and calculate variances.	Y	
61	22	Ability to track funding source to position funded.	Y	
62	23	Ability to track both funded and unfunded vacancies.	Y	
63	24	Ability to plan and forecast human resource requirements.	Y	
64	25	Ability to forecast eligible retirees, based on bargaining unit category, age, years of service, and retirement plan (part of workforce composition reports).	Y	
65	26	Ability to track employee turnover by department, classification, ethnicity, gender, geographic location, etc. (part of workforce composition reports).	Y	
66	27	Ability to track open positions and time to fill by department.		Y
		1.3.0 Complete Position Classification		
67	1	Ability to allow mass updates to job descriptions.		Y
68	2	Ability to accommodate job sharing.		Y
69	3	Ability to double and triple fill positions and track.	Y	
70	4	Ability to track and report on over and underfilled positions.	Y	
71	5	Ability to accommodate employees who work in multiple positions at the same time.	Y	
72	6	Ability to support standardized competencies.		Y
73	7	Ability to support job roles and skill requirements.		Y
		1.4.0 Manage Employee Performance		
74	1	Ability to support performance reviews.	Y	
75	2	Ability to support notification that employee reviews are due.	Y	
76	3	Ability to track completion rates of employee reviews.	Y	
77	4	Ability to track performance ratings by demographics, departments, age, division, etc.	Y	
78	5	Ability to capture employee performance appraisal history.	Y	
79	6	Ability to track merit increase (%) by organization, fund, etc.	Y	
		Ability to track disciplinary actions:		
80	7	Maintaining history of the actions.	Y	

#		Requirements	2003-05	2005-07
81	8	Monitoring outcome of the actions.		Y
82	9	Tracking involvement in sexual harassment or discrimination suits.		Y
83	10	Tracking the consistency of actions and/or reactions.		Y
84	11	Ability to establish and monitor performance plans (last chance agreements).		Y
		Ability to provide employment activity analysis reports for the following:		
85	12	Promotions.	Y	
86	13	Terminations.	Y	
87	14	Layoffs and recalls.	Y	
88	15	New hires.	Y	
89	16	Lateral Transfers.	Y	
1.5.0 Compensate, Recognize and Reward Employees				
90	1	Ability to track and acknowledge service, including retirements, and provide different programs per department.		Y
91	2	Ability to track an anniversary date that may be hire date, re-hire date, or last promotion date.		Y
92	3	Ability to add additional seniority time for employees who have worked for other covered jurisdictions (City of Olympia, Thurston County, etc.)	Y	
93	4	Ability to reward attendance, safe driving, etc. (monetary).	Y	
94	5	Ability to build business rules based on initial salary over designated amount (assignment pay).	Y	
95	6	Ability to support Performance Incentive Pay.	Y	
96	7	Ability to support Interim Assignment Pay.	Y	
97	8	Ability to support various levels of pay & pay scales within the same job class.	Y	
98	9	Ability to support "Y-Rates" (i.e., an employee is paid above the maximum salary in a classification and may be exempt or receive different amounts from COLA's, etc.).	Y	
99	10	Ability to support business rules for calculating compensation such as apprentices receiving a percentage of the normal salary for a classification, or volunteers receiving no salary and only the State portion of the L & I premium paid.	Y	
100	11	Ability to store history information for both Performance Incentive Pay and Interim Assignment Pay to track total paid by department, year, etc.	Y	
101	12	Ability to support 'what if' salary scenarios such as cost of living increases, etc.	Y	
102	13	Ability to provide additional compensation for positions requiring special skills.	Y	

#		Requirements	2003-05	2005-07
103	14	Ability to support geographic/regional pay and special pay.	Y	
104	15	Ability to support lump sum bonus payments to retain personnel, meet market conditions, etc.	Y	
105	16	Ability to support automatic periodic increments by percentage or range in and step.	Y	
		1.6.0 Manage Employee Relations		
106	1	Ability to support a multi-tier grievance system.		Y
107	2	Ability to provide notification of expiring grievance timelines.		N
108	3	Ability to capture employee grievances and appeals by type.		Y
109	4	Ability to support multi-tier discipline system.		Y
110	5	Ability to track concurrent grievances for same employee.		Y
111	6	Ability to track complaints filed externally, i.e., EEOC, DOL, ADA, Human Rights Commission.		Y
112	7	Ability to support layoffs/RIF's considering various criteria.	Y	
113	8	Ability to maintain and report on recall lists.	Y	
114	9	Ability to support different types of separation packages.		Y
115	10	Ability to support termination of benefits and notify Health Care Authority & Retirement Systems of separation.	Y	
116	11	Ability to track separation reasons by employee type, department, or other organizational entity.	Y	
117	12	Ability to log, track, and develop reports for Arbitrations and Mediations.		Y
118	13	Ability to maintain workforce reports by name, gender, ethnicity, classification, date of birth, salary, hire date, etc.	Y	
119	14	Ability to maintain and report on employee seniority.	Y	
120	15	Ability to maintain layoff lists by employee, seniority, etc.	Y	
121	16	Ability to maintain assignment and transfer lists.		Y
122	17	Ability to have registers/lists updated by actions keyed in the appointment side of the system, i.e., when candidate is appointed in personnel/payroll system, candidate's name is removed from register/list.		N
		1.7.0 Manage Labor Relations		
123	1	Ability to capture employee grievances and appeals by type.		Y
124	2	Ability to support multi-tier discipline system (e.g., progressive discipline and support consistent application).		Y
125	3	Ability to track complaints filed externally, i.e., EEOC, DOL, Human Rights Commission, ADA discrimination.		Y
126	4	Ability to maintain and report on bumping lists.	Y	

#		Requirements	2003-05	2005-07
127	5	Ability to maintain and report on recall list (RIF register).	Y	
128	6	Ability to support layoffs/RIF's considering various criteria (i.e., performance, seniority).	Y	
129	7	Ability to support termination of benefits and notify insurance carriers of separation.	Y	
130	8	Ability to log, track, and develop reports for Arbitrations.		Y
131	9	Ability to log and track multi-tier inter and intra-agency Memos of Understanding (work rules) contract issues.		Y
		Ability to maintain workforce reports by:		
132	10	Name.	Y	
133	11	Gender.	Y	
134	12	Ethnicity.	Y	
135	13	Classification.	Y	
136	14	Date of Birth.	Y	
137	15	Salary (Range Equivalency, Placement, Exact Dollar Amount).	Y	
138	16	Budget Unit (Account Code).	Y	
139	17	Bargaining Unit (Agency, Division, Program, Work Unit, Location, Which members are paying dues).	Y	
140	18	Hire Date.	Y	
141	19	Status (Permanent or Temp).	Y	
142	20	Agency Continuous Service Credit.		Y
143	21	Time in Grade.		Y
144	22	Bargaining Unit Time Credit.		Y
145	23	Lay-off Units (Geographic Bumping).		Y
		Ability to attach employee organization and/or union membership to an employee at:		
146	24	Master Agreement Level.	Y	
147	25	Bargaining Unit Level.	Y	
148	26	Business Unit (applicable for contracting out).	Y	
149	27	Ability to track if employee has been advised of union shop requirements.		Y
150	28	Ability to track time used for union business.		Y
151	29	Ability to track employees who are on a leave of absence for union business.		Y
152	30	Ability to support bargaining unit contract administration.		Y
153	31	Ability to deduct union dues (as well as a variety of voluntary deductions).		Y
154	32	Ability to transmit dues and agency fees to certified agent.	Y	

#		Requirements	2003-05	2005-07
155	33	Ability to notify employee of non-payment (of dues).		Y
156	34	Ability to furnish transaction reports to union on number of employees in unit, etc.	Y	
157	35	Ability to maintain and report on employee seniority.	Y	
158	36	Ability to maintain assignment and transfer lists.		Y
159	37	Ability to generate bargaining unit contract reviews via business rules.		Y
High Priority Requirements – Leave				
	2.1.0 Manage Paid Time-Off			
160	1	Ability to track leave balances and warn if balance is insufficient for time entered.		Y
161	2	Ability to provide employee online information for vacation and leave of absence (including expirations).		Y
162	3	Ability to identify and track absence trends by employee.		Y
163	4	Ability to capture and track multiple leave types (including jury, election, religious, military, bereavement, disaster, volunteer activities, paid & unpaid sabbaticals, personal holidays, educational, administrative, suspensions, etc.).	Y	
164	5	Ability to add new leave types and define how they are used.	Y	
165	6	Ability to support donation of vacation leave, sick leave, and personal holidays to a pool.		N
166	7	Ability to track pool balance.		N
167	8	Ability to support donation of vacation leave, sick leave, and personal holidays to an individual.	N	
168	9	Ability to track the donation of leave to an individual and also track allowable maximums that can be received.	N	
169	10	Ability to manage sick leave buyout program on an annual basis and at retirement (at varying buyout rates).		N
170	11	Ability to accrue sick leave time based on straight time paid bi-weekly, weekly.	Y	
171	12	Ability to accrue sick leave time based on work status, hours worked, years of service, and eligibility.	Y	
172	13	Ability to accrue vacation leave time based on work status and years of service.	Y	
173	14	Ability to track vacation maximums and hours lost.	Y	
174	15	Ability to allow excess annual leave to accrue until employee anniversary date.	Y	

#		Requirements	2003-05	2005-07
175	16	Ability to allow excess annual leave to accrue for a period of time (as approved) and balance to be kept separate to be used first when leave is then taken.	Y	
176	17	Ability to track holidays taken (some holidays may not be taken on the actual date of the holiday).		Y
177	18	Ability to accrue personal holidays based on a variety of criteria.	Y	
178	19	Ability to track comp time earned, taken, and balance.	Y	
179	20	Ability to track comp time expiration based on periods.	Y	
180	21	Ability to pay out comp time balances.	Y	
181	22	Ability to convert leave from one type to another.	Y	
182	23	Ability to convert leave to cash on a yearly basis, at termination, or at retirement.	Y	
183	24	Ability to support annual leave cash-outs that may or may not be subject to retirement.	Y	
184	25	Ability to track Voluntary Employee Benefit Accounts (VEBA) related to retirees' ability to receive accrued vacation and sick leave upon retirement in a manner that is tax advantageous to the employee.		Y
185	26	Ability to assign specific employees and/or positions with a VEBA unit.		Y
186	27	Ability to track exchange time for exempt employees		N
		2.2.0 Manage Leave Without Pay		
187	1	Ability to track leave without pay.	Y	
188	2	Ability to track the impact of unpaid leave on seniority.	Y	
189	3	Ability to recognize when a Leave of Absence (LOA) status goes from paid to unpaid.		Y
190	4	Ability to track unauthorized absences (unauthorized leave without pay).		Y
191	5	Ability to manage Family Medical Leave Act (FMLA) application process and approval.		Y
192	6	Ability to track FMLA used.	Y	
193	7	Ability to track FMLA taken by spouses that are also State employees.	Y	
194	8	Ability to establish different criteria for payment of FMLA from different leave plans, i.e., exhaust sick leave first.		Y
195	9	Ability to track concurrent FMLA leaves.	Y	
196	10	Ability to track benefits while on FMLA leave.		Y

III. Conceptual System Design

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A. Application Infrastructure

1. Payroll System Modification

No significant changes to the current application infrastructure design have been identified in either the mainframe or client/server and web environments.

2. Personnel System Replacement

a. Overview

EAS HRMS is a suite of integrated software applications that perform a broad range of functions. Generally speaking, an EAS personnel system consists of the functionalities listed below, as well as collaborative applications supporting various self-service capabilities.

- Human Resources – Tracks employee information.

- Personnel – Tracks work-related information on employees.

- Benefits Administration – Administers and tracks employee benefits, COBRA participation, and retiree benefits.

The benefit of integrated EAS software is that it is designed to work together seamlessly to efficiently collect information and store it in a common database. This common database is a one-source storehouse of information that is accessed by other software components that need the human resource information.

Data need only be entered or updated once, reducing errors and generating information for time and labor reports, analysis, planning, and for program management. Ultimately, efforts and costs are shifted to innovation, problem solving, and direct service to customers rather than inputting, processing, organizing, verifying, and related "busy work" that costs both time and money.

b. Integrated Functionality

Exhibit III-1 depicts the integration of typical EAS HRMS functionalities.

Exhibit III-1: EAS HRMS Personnel Application Architecture
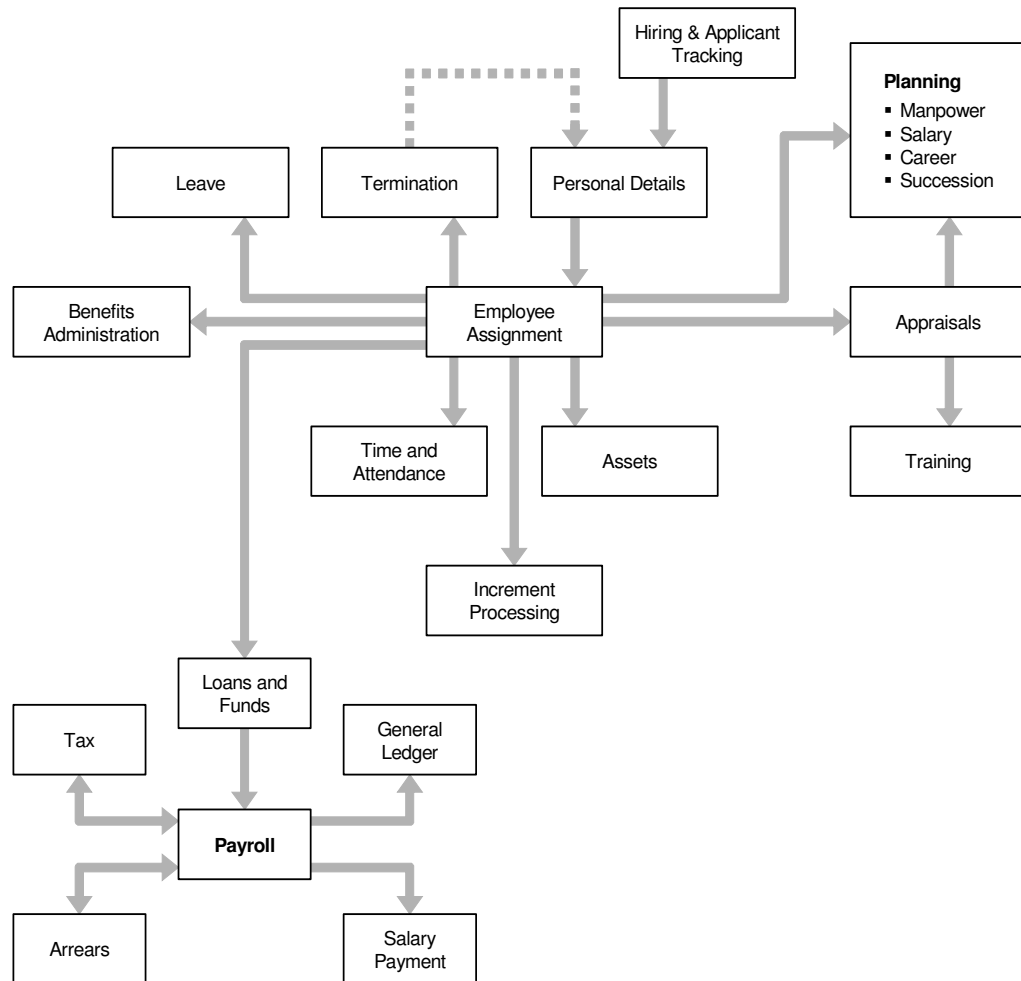
The result of integration is guaranteed data integrity; the data is entered once, stored, and used to provide the same accurate data no matter how many processes access the database. For instance, an employee's name, address, position, and job information is entered into the human resource modules of the system and is picked up by the payroll-processing module (in this case, HRISD's payroll subsystems, via interfaces from the package personnel system).

Another process will pick up that same employee and position information and notes that the incumbent has a separation date in the near future, send a reminder to the hiring authority, and allow a vacant position recruitment requisition to be processed through the Intranet for electronic approval. Upon approval, the recruitment module picks up the information and begins the recruitment and hiring process to fill the position by the requested date. When a new employee is hired the recruitment module will pass the information to the personnel module

and the cycle begins again. This is a 'best practices' integrated system with all components working together for accurate flow of data and processing.

c.   Phase I: 2003-05 Biennium Implementation

To minimize risk, the State of Washington prefers to take an incremental approach to EAS Human Resources implementation. However, because of the integrated nature of EAS, it is necessary to implement at least base functionality in each of these functional areas: Human Resources, Personnel and Benefits Administration. It is recommended that Washington State include the following functionality in their initial implementation effort:

- Security
- Reporting
- Company Structure
- Job Structure
- Employee Groups
- Position Control
- Staffing Requirements
- Employee Positions
- Performance Reviews
- Personnel Actions
- Employee History
- Wage Analysis
- EEO Reporting
- Contract Tracking
- Maintenance of Employee Records
- Employee Enrollment
- COBRA and Retiree Tracking and Enrollment

It is understood that collective bargaining agreements will not become effective until six months after Phase I has been configured and "go-live" has been accomplished on January 1, 2005. Consequently, the integrator will work with the State to configure the EAS HRMS application for the new collective bargaining requirements. It is not expected that this effort will be significant. The configuration and subsequent migration of employees to their new collective bargaining status

will be accomplished as part of the post-implementation efforts for Phase I and the configuration portion of Phase II.

d.   Phase II: 2005-07 Biennium Implementation

The following enhanced functionalities are suggested for deployment to a limited number of "early adopter" agencies for the 2005-07 biennium and will provide further HRMS efficiencies:

- Employee and Manager Self-Service

- Workforce Analytics

- Performance Management

- E-Recruiting

- Training

- Approval and Notification Workflows

e.   Phase III – 2005-07 Biennium

Deployment of the enhanced functionalities as detailed above in Phase II, is suggested for those agencies not included in the Phase II deployment. It is also suggested that this phase have limited support from the external integrator and that the State resources lead this phase.

Once the State has selected a specific software package, the suggested functionalities and implementation phasing will need to be revisited since each software package may require slightly different implementation phasing.

B. Technical Infrastructure

1. Payroll System Modification

No significant changes to the current technical infrastructure design have been identified in either the mainframe or client/server and web environments.

2. Personnel System Replacement

a.   Multi-tiered Environment

Generally, EAS systems run in one of the multi-tiered environments depicted in Exhibit III-2. However, the introduction of enhanced Internet/Intranet support by

EAS vendors has resulted in the "n-tiered" implementation of client/server applications becoming the option chosen by most customers.

Exhibit III-2: Client/Server Tiered Architecture

| 2-Tiered | 3-Tiered | n-tiered |
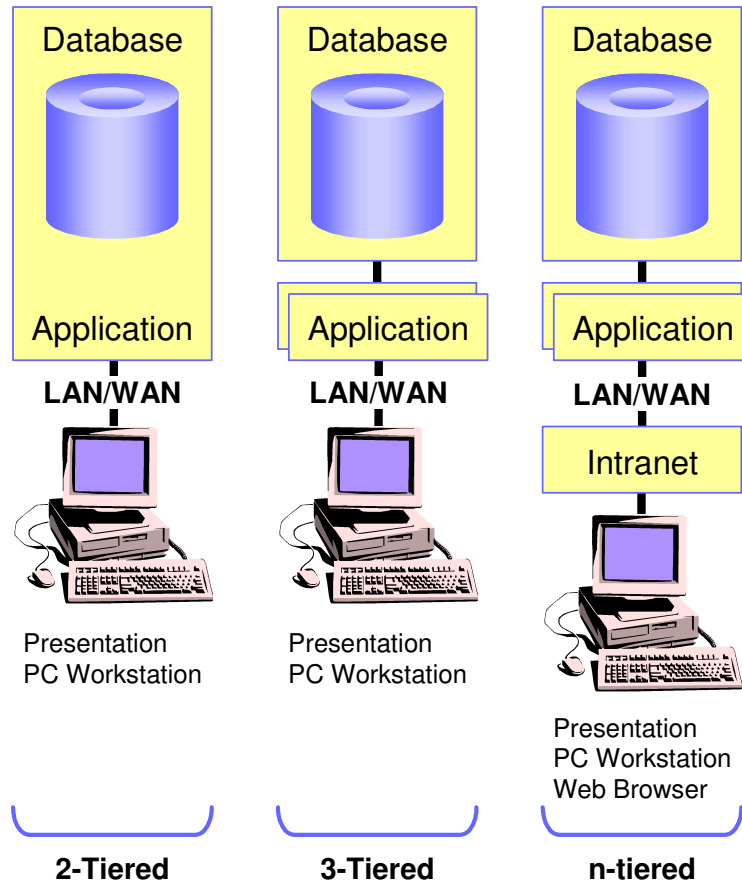
b. **Software Instances**

In a typical EAS, the technical environment will be made up of multiple *instances* of the EAS software running on multiple *systems*. These instances all run together in a system *landscape*. For purposes of clarity, an *instance* is defined as a group of resources such as memory, work processes, etc. EAS instances generally share a common set of buffers and are controlled by the same dispatcher process. A *system* is defined as a collection of one or more instances with a common database.

c. **System Landscapes**

A landscape is defined as a series of one or more EAS Systems needed throughout the development, test, production and maintenance phases of an EAS

implementation project. For example, a simple EAS landscape may be implemented as illustrated in Exhibit III-3.

Exhibit III-3: System Landscape Example

Development   Test   Production
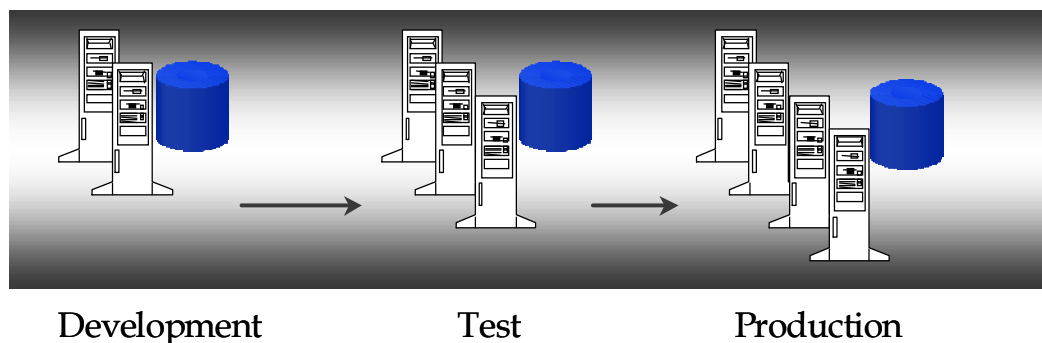
A complex landscape designed to accommodate the needs of a large organization can contain many more systems: There may be several systems used for technical and functional development, and there may be several systems used for testing and training. Finally, there may be several systems to support production. EAS systems are used as building blocks for an overall landscape.

d. Networking

Networking in most EAS systems is accomplished using TCP/IP network protocol. A robust wide area network, which adequately serves all end user locations, is a key factor in a successful implementation of an EAS system.

Most EAS systems provide end user access to the application in multiple ways. For example, some EAS vendors offer a proprietary GUI, which is generally recommended for "power users" or others who access the system on a daily basis. The proprietary GUI optimizes network performance and load. It is also required in some cases to provide the complete feature set of the EAS. However, the GUI requires a workstation configuration adequate for the task and in some cases must be maintained as part of the desktop software image.

For more casual users of the system (executives, or employees using employee self-service application), most EAS vendors offer access to the system with HTML using a standard browser like Netscape or Internet Explorer. The benefits of using HTML are obvious: No GUI software to maintain and common user interface using the web. The bandwidth requirements for HTML are in most cases higher than that for the proprietary GUI and should be deployed prudently. Additionally, users may not be able to access all features of the software using HTML.

The other very important network requirement is that of a robust, high performance, local area network over which the servers communicate. In a typical EAS system, the data communication requirements between applications and database server are many times higher than from the Application server to the user workstation. Exhibit III-4 depicts typical bandwidth requirements between major components of an EAS.

Exhibit III-4: EAS Bandwidth Requirements Distribution

Presentation Layer

Workstation

3% of Network Traffic

Application Layer

Application Server

97% of Network Traffic

Database Server

Database Layer
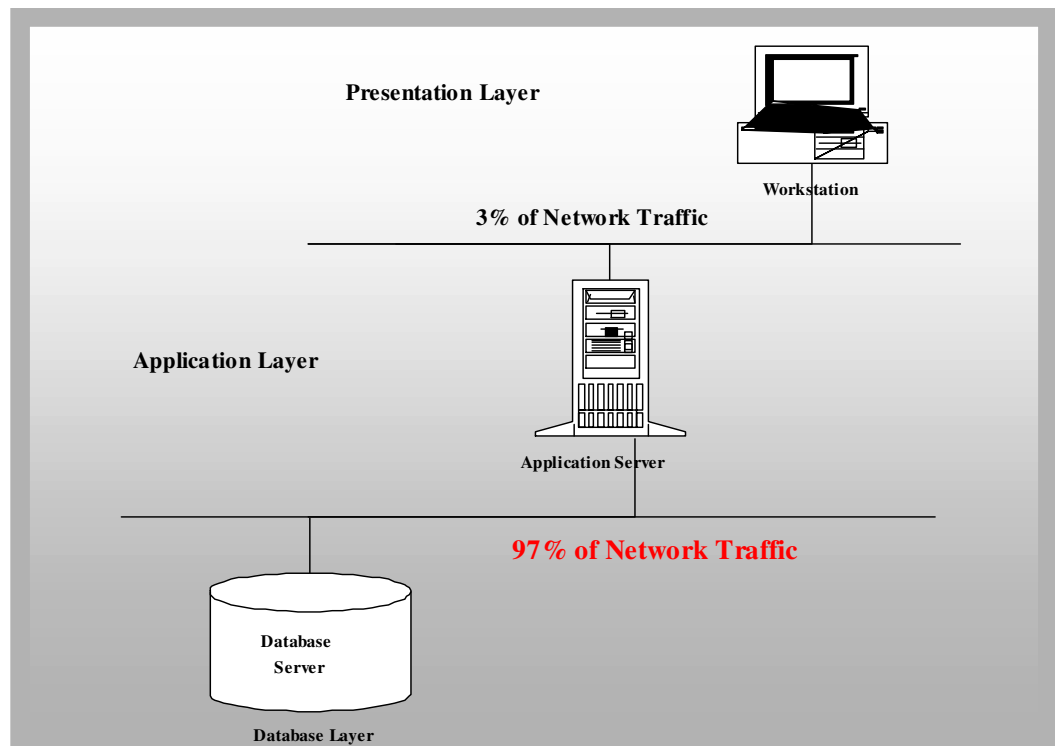
IV. Technical Component Requirements

■

A. Payroll System Modification

1. Hardware and System Software Requirements

HRISD will need desktop computers and supporting network connections, along with some important additions to the systems services available from DIS.

a. Client/Server and Web Environment

(1) Hardware

Additional desktop computers and client software will be required for project staff members. It is expected that additional contract programmers will be hired to complete the development work, and will work alongside selected members of HRISD's technical staff. In addition, contractors will be hired to take on the normal maintenance and development workload normally performed by assigned HRISD staff. All of these individuals will require additional workstations, including network connections, to complete work on the mainframe, as well as in the client/server and web environment. Those working in the latter environment will need sufficient workstation memory and disk space capacity, along with appropriate development tools, to work effectively. This will mean purchase of new workstations and associated software.

No additional server-level hardware or software is required within the client/server and web environment.

(2) Development Tools

Developer workstations used for development in the client/server and web environments will require a suite of design and development tools.

b. Mainframe Environment

(1) Expanded test environment

In order to effectively develop the modifications required to current mainframe systems, HRISD will require an expanded test area operating within the DIS operations environment which is currently used to operate HRISD supported applications. This will add cost to the current interagency agreement and Service Level Agreement between HRISD and DIS.

(2) Additional storage

Additional data and databases will be required to support the CSR/CB development effort. HRISD estimates that additional disk space will be required in the mainframe environment to support this.

2. Workstations

It is assumed that no new workstations or workstation configurations will be required upon implementation of the modification alternative.

3. Network Components

It is assumed that no new network components will be required upon implementation of the modification alternative.

B. Personnel System Replacement

1. Overview

EAS systems are very comprehensive and highly flexible, and are delivered for a wide-variety of hardware and operating system platforms. EAS systems are client/server applications—where database services, applications services and presentation services run on separate devices. The platform independent nature of most EAS systems now makes it possible to run presentation as well as application and database services on different machines and operating systems.

2. Assessment of Current Resources

During October 2002, interviews were held with members of the HRISD and DIS organizations in order to ascertain the high-level IT architectural capabilities of the respective groups relative to their ability to support a possible future EAS system

implementation. The following is a summarization of our findings in each of the organizations analyzed.

a. HRISD IT Infrastructure

The HRISD IT Infrastructure is Microsoft–centric in an Intel-based server environment. The major applications utilize MS SQL Server for the database. There is one Oracle database, but the development and maintenance of this application is not supported by HRISD. HRISD IT maintains the Web-based and ancillary systems for statewide human resource information systems, such as the Data Warehouse and the Decision Support Data Mart. The data in these systems, however, have their origins in the mainframe applications' databases housed in DIS.

HRISD systems are all attached to HRISD's LAN, which in turn attaches to the DIS data network, which serves all agencies using the HRISD systems. Agency workstations are running a mix of MS Windows 95/98/2000 and access to mainframe system is accomplished using the TN3270 terminal emulation software. All access for workstations is TCP/IP. Each agency is responsible for acquisition and configuration of its respective workstation software and hardware.

HRISD has begun to develop formal IT processes for key activities in the maintenance of its IT components. Insight Manager has been installed and is being used to monitor HRISD servers and end user workstations. However, the responsibility for workstation software deployment and performance remains with the respective agencies. A server backup process is in place using Veritas as the backup tool.

HRISD has developed a core organization responsible for the administration and operation of the infrastructure components, which are owned by HRISD. There is a formal help desk in place which functions as level 1 support for all of the agencies which use HRISD systems. Either HRISD development/data management groups or DIS, depending upon the nature of the problem, provide level 2/3 support.

b. DIS IT Infrastructure

The DIS IT Infrastructure is primarily mainframe-centric, having at its core large S/390 mainframes. The primary database software supported on the mainframe for HRISD applications is ADABAS. However, DIS has significant experience with IMS and, most recently, is enlarging its portfolio with DB/2 skills—as a result of significant development in other agencies of State Government. DIS employs logical partitioning (LPAR) technology on the S/390 to provide for improved application separation and performance and is in the process of implementing high-availability using the S/390 Parallel Sysplex option.

The DIS IT Infrastructure also contains UNIX and NT components.

DIS is an IT processing utility and, as such, has developed and maintains very mature IT processes. Critical IT processes for Service Level Agreement and management, Backup/Recovery, change and problem management, and disaster recovery are in place and are maintained on a regular basis. The technical staff is highly trained in the system administration of platforms supported including S/390 and UNIX. The Help Desk at DIS is accustomed to providing all levels of support, including levels 2/3.

DIS systems are supported by a robust set of systems' management software, including CA1 (tape management), CA7 (scheduling) and RACF (security).

c.   HRISD/DIS IT Comparison

Based upon the analysis conducted so far, it would appear that the IT Infrastructure in DIS is far better equipped than HRISD to provide the key IT Infrastructure components required by an EAS. By design, the disciplines employed in DIS will allow it to adapt more easily to the challenges imposed in managing the technology components of an EAS.

3.   Hardware and System Software Requirements

a.   Platforms

Two hardware options have been identified for an EAS HRMS solution for the State of Washington; Mainframe and All UNIX The mainframe option utilizes a mainframe as the database server, the All UNIX option utilizes UNIX as the database server.

A complete mainframe option was considered. With this option, the mainframe would function as the application servers as well as the database server. However, industry research indicates that the typical platform configuration employing a mainframe to support an EAS HRMS assigns the database server to the mainframe and the application servers to either UNIX or NT2000 servers. The primary reason appears to be an anticipated lower cost of running the application servers on a platform other than the mainframe. Installations running the application servers on the mainframe are typically those that require ultra-high availability environments in a large parallel processor complex.

The proposed options are detailed below. Platforms are based on IBM products for illustration purposes only.

(1) Mainframe

- S/390 (zSeries) Database Server

- UNIX (pSeries) application servers

- NT (xSeries) Network Servers

- 2105-F20 Enterprise Storage Server

- 3584-L32 Tape Library

(2) All UNIX

- UNIX (pSeries) Database Server

- Failover Server

- UNIX (pSeries) Application Servers

- NT (xSeries) Network Servers

- 2105-F20 Enterprise Storage Server

- 3584-L32 Tape Library

b. Platform Sizing Assumptions

- The production EAS environment will be a centralized system with servers located in a single data center.

- A user-based sizing approach will provide sufficient estimates for the purposes of this study. It is recommended, however, that the EAS implementation team conduct business transaction-based sizing exercises to further refine this estimate.

- User quantification for hardware sizing is as follows:

  - 1,700 low volume users

  - 1,000 medium volume users

  - 247 high volume Employee Self Service (ESS) users

    For the ESS users, it was assumed that during the peak period there would be 56,000 possible users, executing 5 enter key transactions or less per transaction. Formula employed to determine the high volume ESS users: (56,000 users – 2700 online users) * 5 step transaction = 266,500 / 10,800 (3 hours) = 24.67 * 10 (high workload user) = 246.7 users.

c. Sizing Results

Exhibit IV-1 illustrates the results of the hardware sizing task. Sizing is based on IBM products for illustration purposes only.

Exhibit IV-1: Sizing by Option

System	Server Function	Model/Nomenclature	Mem[1]	DB[1]
Mainframe				
Production[2]	Database Server	71% of (1) z800 2066-0A2 running at 90% CPU utilization with 10% LPAR overhead I/O Rate = 1,640 per second	3	500
Production	Application Servers	(3) P660 6h1, 750 MHz, 2-way	14	
Production	Internet Trans. Servers	(14) x360, 1.6 GHz, 2-ways	2	
Sandbox	Application Server	(1) p630 6C4, 1GHz, 2-way	2	
Development	Application Server	(1) p630 6C4, 1GHz, 2-way	3	
QA	Application Server	(1) p630 6C4, 1GHz, 2-way	3	
All UNIX				
Production[2]	Database Server	(1) P660 6H1, 750 MHz, 4-way	12	500
Production	Application/Fail-over	(1) P660 6H1, 750 MHz, 4-way	14	
Production	Application Servers	(2) P660 6H1, 750 MHz, 2-way	14	
Production	Internet Trans. Servers	(15) x360, 1.6 GHz, 2-ways	2	
Sandbox	Central Server	(1) p630 6C4, 1GHz, 2-way	2	
Development	Central Server	(1) p630 6C4, 1GHz, 2-way	3	
QA	Central Server	(1) p630 6C4, 1GHz, 2-way	3	

[1] Mem – Memory in gigabytes, DB – Database in gigabytes
[2] Plus non-production

d. Configuration Results

Exhibit IV-2 and IV-3 beginning on the next page, provide graphical displays of the hardware configuration for each option. Configurations are based on IBM products for illustration purposes only.
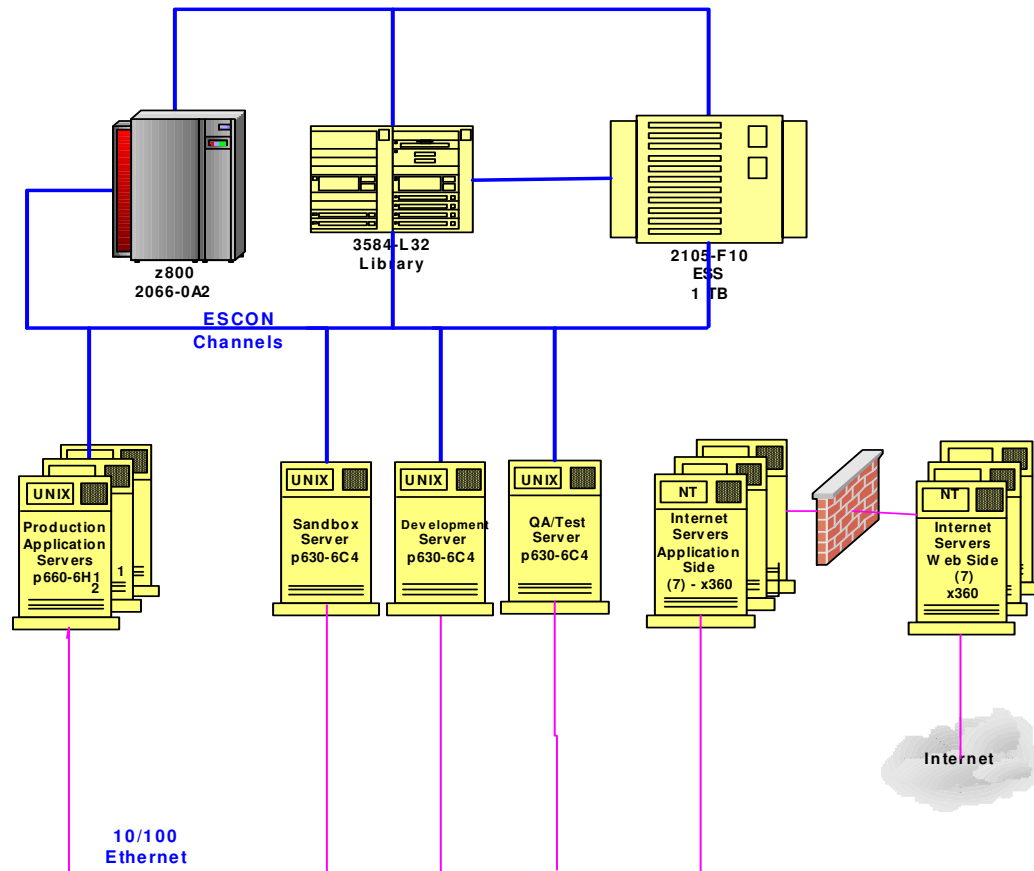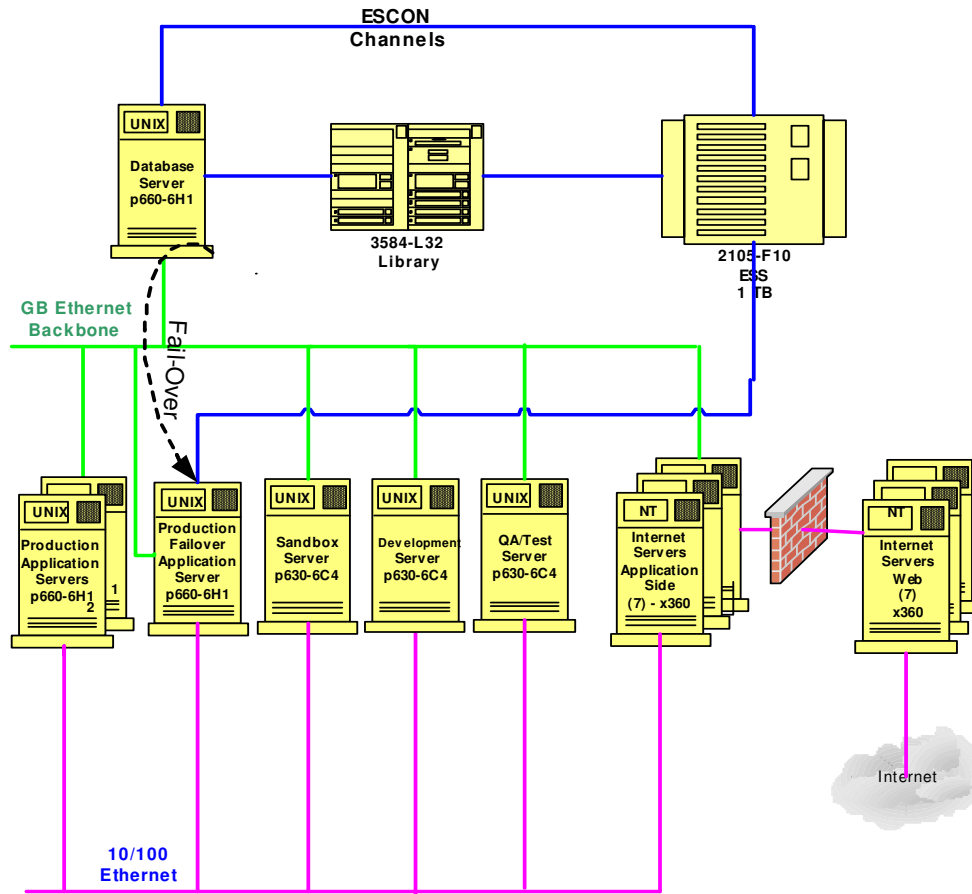
Exhibit IV-2: Mainframe

Exhibit IV-3: All UNIX

e. System Software Components

System software components are based on IBM products for illustration purposes only.

(1) Operating System

- Mainframe (S/390)

  O/S 390 version 2.8; DB2/390 Version 6 and ESCON or OSA2 capability. In addition, DFSMS Sort and RACF are required.

- pSeries Servers

  UNIX-AIX V5.1, HACMP. In addition, backup software such as Tivoli SMS or other tape back software is recommended.

(2) Database Management

DB/2 is recommended for all solutions unless an Oracle EAS HRMS is selected, in which case it would be necessary to use the Oracle database.

4. Middleware

At this point in the analysis and design of a technical infrastructure to support an EAS HRMS system at the State of Washington, it is unclear what new middleware components might be required, although it is understood that approximately 225 existing interfaces would need to be supported.

At a minimum, the State of Washington should plan to leverage the current investment in products such as MQSeries. The popular messaging products (MQSeries) and Integration software (CrossWorlds) now have "plug-ins" to provide access to interface file types which have been developed as standards by the respective EAS vendors. This does not eliminate development efforts on the legacy side, but can save considerable time if the standard interfaces can be utilized in the EAS. These products also stay in synchronization with the EAS vendor as interfaces change or as new interface types are established, thereby eliminating system maintenance and upgrade problems in the messaging area.

5. Workstations

Most EAS vendors provide a proprietary GUI which runs on the end user's workstation. In order to realize the highest levels of network efficiency and EAS functionality, it is highly recommended that day-to-day ("heads-down") users of the system use the GUI for EAS access.

Current printers and workstations have not been evaluated to determine whether they are sufficient to support an EAS system. Based upon the requirements for generic EAS HRMS systems, workstation requirements and recommendations have been developed and are displayed in Exhibit IV-4. This workstation configuration will run most all EAS GUI software. Employees accessing the application through the Internet, i.e., those employees utilizing ESS and/or accessing the system on less than an "all day, every day" basis, only need a workstation capable of launching a browser.

Exhibit IV-4: Workstation Configuration

Description	Recommendation
Workstation Configuration	Win2000
CPU Minimum	P200+
CPU Recommended	P200+
Memory Minimum	64MB
Memory Recommended	96MB
Hard Disk	50MB server, 280MB local
Display Minimum	17" 1024x768, 256 color
Display Recommended	17" 1024x768, 32k color

6. Network Components

It is assumed that current network capacity will be adequate to support an EAS initiative.

V. Organizational Impact

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A. Payroll System Modification

1. Production and Support Processes

a. Service Level Agreements

Modifications to HRISD's Service Level Agreement with DIS will likely be needed to reflect the additional technical resources DIS must provide to support the expanded test environment.

b. Data Sharing Agreements

HRISD currently has two Data Sharing Agreements (DSA's) in place; one with the Department of Retirement Systems, and another with the Office of Financial Management. A DSA is being developed with the Office of the State Treasurer. Additional DSAs may be required as a result of this project to support the data needs of other state agencies and, possibly, the unions.

2. Project Management and Systems Development Practices

HRISD has made substantial progress in the last couple of years in improving its project management and system development practices, including significant improvements in its system testing practices. These improvements include drafting and implementing guidelines for project management, requirements development, testing, and other components of the system development process. HRISD is also providing in-house training on these topics to staff. These efforts should continue and be further expanded as HRISD undertakes proposed system changes.

It will be critical to the success of this project that HRISD continue to improve its project management and development practices. This includes developing detailed, documented processes and procedures, developing clearly defined roles, and providing training in these procedures to all HRISD staff.

3. Documentation

As discussed in the Current Technical Architecture document, system design documentation is not available for any of the current systems. The completion of at

least high-level documentation of all systems, and providing a centralized online index of the available documentation, will be important to the efficient and accurate completion of required system changes.

4. New Skill Sets Needed

It is assumed that no new skill sets will be required to support the modification project after implementation.

5. Project Staffing

Considering the project's magnitude, the State may wish to consider organizing a Project Management Office and seeking the services of an external integrator to direct it. Though an "integrator" approach would reduce project risk, it would add significantly to project cost and has not been included in the staffing projections.

HRISD has directed that all technical project staffing be external resources acquired on a contract basis. Exhibit V-1 displays the estimated staffing requirements of Alternative 1.

Exhibit V-1: Estimated Staffing Requirements

Category	Months	FTE's
Lead Project Manager	30	0.50
Project Managers/Developers	24	11.30
Requirements Developers	6	1.50
Business Architects	24	1.50
Trainer	18	1.00
Technical Writer	18	0.50
Production Support Staff	24	0.25
Database Management Staff	24	1.00
Environment Management Staff	24	0.25
Help Desk Staff	24	0.25
Network Support Staff	30	0.25
Total:		18.30

a. Lead Project Manager

The Lead Project Manager will direct the overall effort, paying particular attention to schedule, budget, and deliverables, and will directly supervise the

project managers working on individual systems. The project director will coordinate closely with HRISD's Assistant Director and with the Resource Managers for each of HRISD's technology and functional areas.

b.   Project Managers

Project managers will be responsible for individual teams of developers. A project manager will direct day to day activities of a team, develop and monitor schedules, and review and monitor tasks and deliverables.

c.   Developers

The developers category consists of developers, testers, and internal quality assurance personnel. The developers and testers will perform all systems analysis, detailed design, coding, unit testing, system testing, and stress testing functions. They will support customer acceptance testing activities, and provide technical support to system implementation. Internal quality assurance personnel will supervise the test team, develop testing processes and the customer acceptance test plan, monitor test results, and coordinate with implementation and training activities.

(1)   Client/Server and Web Environment Skill Sets

- SQL Server stored procedures
- ASP
- IDC script
- VB Script
- Java Script

(2)   Mainframe Skill Sets

- Advanced analysis, design and programming skills
- COBOL
- ADABAS
- NATURAL

d.   Requirements Developers

Requirements developers will confirm requirements with DOP managers and customer agency representatives. Based on these confirmed high-level requirements,

they will develop detailed requirements and design documents, including processing, data, network, and performance requirements.

e. External Quality Assurance

The external quality assurance contractor will provide oversight to ensure that scope and schedule are effectively managed, that milestones are met, that appropriate management and development processes are being used, and that the resulting system changes meet customer expectations and requirements.

f. Business Architects

Business architects will work closely with developers, internal quality assurance, trainers and the technical writer to ensure that system changes, training and documentation reflect the detailed business requirements and needs of users.

g. Help Desk Staff

Help desk staff respond to questions from users and business and technical personnel representing customer agencies. These questions will cover anticipated changes to HRISD systems, how systems operated by customer agencies must change to accommodate HRISD changes, and customer agency process changes required.

h. Trainers

The trainers will develop, test and deliver training related to new or modified screens, reports, or other system features and functions resulting from this project.

i. Technical Writer

The technical writer will modify all user manuals and supporting material to reflect system changes. This role will also be responsible for creating and modifying system documentation to reflect these changes.

j. Database Administration

The work of database administration involves establishing new files and fields in the test databases, managing the multiple database used for the project, and populating and refreshing multiple development and test databases for several project teams working simultaneously.

k.   Technical Environment and Change Management

This individual will monitor and manage job scheduling for the project, will manage reports and other output media generated, will assist in production verification activities, will support test abends and maintenance fixes, and will monitor system performance and make appropriate adjustments. This person will set up the enhanced testing environment for use by developers and testers, and will support that environment throughout the project. This individual is also responsible for managing program and job libraries and versions, and developing and supporting check-in/check-out and program/system migration procedures.

l.   Network Support Staff

Network support staff will install and support additional networking hardware and software needed to support the project team. This person will also provide workstation and application support for all project staff, and for software running on the network or on the local PCs. This person will ensure that all project staff computers stay up and running and connected to the network at all times to maximize staff productivity. It is expected that project staff will be quite transient, with individuals regularly joining and leaving the team depending on the varying staffing demands of the project. This will create more demand for network support to properly re-configure desktop machines with logon IDs, passwords, and permissions.

6.   Ongoing Staffing

For ongoing support after implementation, no new organizational units will be required. Maintenance, customer interface, help desk, and other needs can be met within HRISD's current organizational structure.

B.   Personnel System Replacement

1.   Production and Support Processes

The State of Washington must address various IT infrastructure processes to ensure a successful EAS HRMS implementation. Some process areas in the IT infrastructure are more mature than other process areas. For example, Disaster Recovery and Change Management are mature IT processes, and should be used as models for new process areas.

a. **Backup and Recovery**

- Develop backup and recovery, which include a periodic testing schedule against all possible data loss scenarios envisioned by functional personnel. Exploit the features of Electronic Storage Subsystems Copy Services, where possible, in conjunction with EAS requirements and service level objectives.

- Establish maintenance and offline backup windows for database reorganization and offline backups for production servers.

- Implement backup strategy for NT servers.

b. **EAS Change Management**

- Adapt current change management process to accommodate EAS transports across landscapes, combining technical, functional, and business representatives for key approvals of major changes that may affect the production environment.

- Establish a formal EAS change management process for the steady state environment.

- Adapt Infoman, the current DIS change management tool, as the vehicle for managing EAS transports as soon as practical to provide centralized tracking and notification of changes and provide a clear audit trail of approvals.

c. **Help Desk**

- Develop help desk procedures which are closely integrated with Change Management and Problem Management procedures. All three procedures use the Infoman tool and, therefore, cause and effect relationships can be determined.

- Establish Help Desk process and procedures for prioritization, call outs, and escalation.

- Establish roles and responsibilities for each level of EAS support. Each support level should establish documented Service Level Agreements (SLAs).

d. **EAS Application Security**

- Consider a central administration tool for EAS Application Security implementation and administration.

- Ensure that proper knowledge transfer is executed for steady state support.

- Determine security methods and associated components for the EAS (LDAP, SSO, Digital Certificates, SSL, etc.) and adjust related planning and architecture to accommodate.

- Begin detailed planning for infrastructure level security surrounding the Internet. It is important to start this planning early, as it often requires the collaboration of corporate standards, 3rd party security components, firewall and network architecture, etc.

e. Output Management

- Establish output management software requirements (ASCII printing, front-end printing, facsimile).

- Define comprehensive output management test procedures.

- Establish single points of contact within end user departments to manage respective printers.

- Establish escalation and callout procedure for critical print jobs and critical printers.

- Establish comprehensive printer test plan to test every output type identified.

f. Service Level Agreements

DIS presently negotiates SLAs with its customers. The current SLA, once modified to reflect EAS metrics, should be adequate to meet users' requirements, assuming that the SLAs reflect quantifiable and measurable performance elements, which can vary in complexity from existing measurement and reporting. Suggestions for modification of the SLA's include:

- Using the present SLAs as a guide, establish formal SLAs covering all platforms and servers used in the EAS HRMS implementation (NT and AIX servers, web servers, integration server and EAS HRMS servers).

- Modify formal EAS HRMS metrics to reflect the performance expectations and measurable metrics of the EAS HRMS such as availability, response time, and batch performance.

- Update formal EAS HRMS production maintenance and backup windows. This is very important considering the large data volumes and software maintenance requirements of an EAS HRMS.

- Establish formal responsibilities for monitoring and managing SLAs.

2. New Skill Sets Needed

A variety of talents, skills, job roles, and training are required to successfully build and maintain the infrastructure for an EAS system. There are many critical IT activities that must be managed during design, implementation, and production phases of the project that require specialized skills in the underlying platform technology as well as the special technical intricacies of the specific EAS product itself.

a. EAS System (Kernel) Administration

In an EAS environment, there are specialized functions at the system level which are required to support the configurable software of the EAS application. For example, SAP's architecture is made up of the Basis Component, or SAP Kernel, which provides the technology layer between the operating system and the application; PeopleSoft utilizes a technology set called PeopleTools, which is less proprietary than SAP's Basis Component, but is still required to maintain performance of the PeopleSoft application. Both of these "kernel-related" components require highly trained technical specialists to administer them. Using the facilities of these kernel components, the EAS System Administrator will provide for regular EAS backup, provide for data recovery mechanisms, grant users logins to the EAS system, and monitor and file usage. In addition, the EAS System Administrator will monitor spool, job scheduling, and configuration of new EAS servers. Finally, the EAS System Administrator provides problem resolution to the help desk, monitors database table and indexes via specialized EAS technology monitoring software, and schedules database alterations with the Database Administrator (DBA). The EAS System Administrator will also serve as an EAS expert to the IT team.

The candidate for this position can be an existing staff member, preferably someone with existing experience in the administration of the underlying platform, such as UNIX or OS/390. During the early stages of the project, the identified individuals should attend technical training provided by the EAS vendor and then continue to learn by skills transfer from the integrator during the project implementation phases.

b. Operating System Administration

The primary responsibility of the Operating System Administrator is the maintenance and administration of the underlying operating system(s) which support the EAS. These operating systems include IBM S/390, UNIX and NT. The Operating System Administrator provides support of the EAS infrastructure by performing all functions that require system-level privileges on the EAS system. This position provides infrastructure support of all tools that ship with underlying systems, such as compilers, debuggers, and mailers. The Operating System Administrator is responsible for maintaining the servers in accordance

with site security standards, and for monitoring system performance and performing OS level backups of the system. The Operating System Administrator teams with the EAS Systems Administrator and the Database Administrator for system tuning. Finally, the Operating System Administrator provides problem resolution to the help desk.

c. Database Administrator

The DBA is responsible for implementation and maintenance of the underlying database of the EAS. In the case of most EAS systems, there are several database options to choose from. The most common EAS databases are Oracle, Informix, SQL Server, and DB2. Other DBA responsibilities are to ensure appropriate tuning of the database structures to optimize EAS performance, to develop and maintain processes to continually ensure data integrity and recoverability, and to deliver expertise in the support and trouble-shooting of database level problems. The DBA will integrate non-EAS database dependent products (bolt-ons) and ensure compatibility between applications and operating systems with the database software and utilities. The DBA will also provide reorganizations of the database when necessary and assist in developing the disaster recovery plan.

Depending on the database that is chosen, additional database administration skills may need to be added to the staff. If Oracle or UDB is chosen in a UNIX environment, then these DBA skills will need to be acquired or developed. On the other hand, if the EAS database server runs on the mainframe, existing DB2 experienced staff should have no problem with database management requirements of the EAS. Additional staff to manage the database, if required, could be provided by retraining current staff responsible for the administration of ADABAS.

d. Other

In addition to the skills identified in this section, participation is required by the network administrators, help desk, and operations functions of the IT organization. IT process experts will need to modify or create the specialized IT processes and procedures required to implement and maintain the EAS technology environment.

It is assumed that current network, help desk, and operations staff are sufficient to absorb the additional workload of EAS once the replacement of current legacy applications is complete.

3. Project Staffing

a. Package Selection

The State is advised to acquire outside resources to assist in the RFP production and integrator/package software selection and acquisition process. Exhibit V-2 represents the estimate of consultant effort associated with this process.

Exhibit V-2: Integrator/Package Selection Staffing

Description	FTE's
Project Management	1.0
Package Selection Consultant	0.75
Change Management Consultant	0.5
Total:	**2.25**

(1) Project Management

The Project Manager will provide project leadership and direction. Tasks that may be performed include:

- Develop team work plans.
- Lead deliverables reviews.
- Coordinate and assign team activities and tasks.
- Coordinate cross team communication and tracking of team's tasks to completion.
- Coordinate problem resolution.
- Assist in leading Status Meetings.

(2) Package Selection Consultant

Package Selection consultants are fully trained in package and integrator selection methodology and possess knowledge of Top Tier EAS HRMS packages as well as an understanding of state government business processes. Anticipated tasks that will be performed include:

- Assist with requirements gathering workshops.
- Assist with 'to be' business process development.

- Conduct vendor analysis.

- Facilitate vendor demonstrations.

- Assist with the development and administration of the RFP.

- Analyze results of the demonstration scoring.

(3) Change Management Consultant

Change Management consultants are trained and experienced in Organizational Change Management theory and practice relating to the challenges of an EAS HRMS implementation. Anticipated tasks that will be performed include:

- Assist in developing a communications program.

- Assist with an Organizational Readiness Assessment.

- Work on the alignment of the project's vision and goals with the State's vision and goals.

- Assist with the development of a sponsorship program.

- Assist with the development of risk mitigation strategies.

b. Implementation Staffing

During Implementation Phase I, II and III of the EAS HRMS project, project management, change management, functional consulting, technical consulting, training and IT infrastructure consulting will be required to manage and execute the implementation in partnership with the State of Washington staff and provide skills transfer to State employees. Exhibit V-3 represents the estimate of implementation project staffing required to implement the EAS HRMS across three implementation phases.

Exhibit V-3: Implementation Staffing

Description	FTE's	Total FTE's
State of Washington:		
Project Management	1.9	
Functional Subject Matter Experts	9.9	
IT Consultants	5.5	17.3
Integrator:		
Project Management	1.5	
Functional Consultants:		

Description	FTE's	Total FTE's
–Human Resources	1.3	
–Benefits	.8	
–Change Management	1.3	
–Training	1.2	
IT Consultants	3.7	9.8
Total:		**27.1**

State of Washington Staffing:

(1) Project Management

The Project Manager will provide leadership and direction in all functional areas. Tasks that may be performed include:

- Develop team work plans.

- Lead deliverables reviews.

- Coordinate and assign team activities and tasks.

- Coordinate cross team communication and tracking of team's tasks to completion.

- Coordinate problem resolution and assist in leading Status Meetings.

(2) Functional Subject Matter Experts

The State of Washington will provide fully trained functional analysts per software application with appropriate leadership attributes, business unit knowledge, and process knowledge of the existing State of Washington Human Resources, Benefits Administration Financials and Payroll systems and external interfaces to other systems. Additionally, change management and training resources will be required. Tasks that may be performed include:

- Participate in the deliverables reviews as needed.

- Provide functional information about the existing application environment.

- Review data file information.

- Participate in application design via the future requirements and fit-gap analysis workshops.

- Assist in problem resolution.

- Participate in status meetings.

- Respond and obtain approval for functionality decisions resulting from participation in requirements, fit-gap analysis, and configuration workshops.

- Facilitate change management implementation.

- Coordinate training efforts.

(3) IT Consultants

The State of Washington will provide fully trained technical consultants to support the implementation of the selected EAS application. A variety of technical roles will be required, including:

- EAS System (kernel) Administration.

- Operating System Administration.

- Database Administration.

- Technical Design and Development.

- EAS Architect.

- EAS Security.

- UNIX Server Management.

Tasks that may be performed include:

- Setup security.

- Test and design application definition.

- Participate in the deliverables reviews as needed.

- Provide technical information about the existing systems.

- Provide technical information on/about the existing application environment.

- Provide technical information about system interfaces.

- Provide data file information.

- Participate in application design.

- Develop technical specifications.

- Provide information about any third party systems, as may be needed for specification creation.

- Code and test interfaces, conversions, adaptations and modifications to the system.

- Provide infrastructure design and implementation services.

- Participate in status meetings.

Integrator Staffing:

(1) Project Management

Project managers have appropriate leadership attributes and knowledgeable in the selected software and/or package selection/change management methodology. (Project Management also includes resources for Executive Management and Project Administration.) Anticipated tasks that will be performed include:

- Lead deliverables reviews.

- Coordinate and assign team activities and tasks.

- Coordinate cross team communication and tracking of team's tasks to completion.

- Coordinate application design via the future requirements and fit-gap analysis workshops.

- Coordinate problem resolution.

- Assist in leading status meetings.

- Maintain the integrator/State of Washington relationship.

(2) Functional Consultants

- Human Resource Consultants

  Human Resource consultants are fully trained, functional analysts that are knowledgeable and experienced in the selected software application and in State-wide EAS Human Resource implementations. Anticipated tasks that will be performed include:

  – Identify future business strategy.

  – Develop implementation strategy.

  – Determine package fit/gap.

  – Design/confirm configuration standards.

  – Develop baseline configuration.

  – Perform integration testing.

- Assist with User Acceptance testing.

- Support production cut-over.

- Provide post-implementation support.

- <u>Benefits Consultants</u>

  Benefits consultants are fully trained, functional analysts that are knowledgeable and experienced in the selected software application and in State-wide EAS Benefits implementations. Anticipated tasks that will be performed include:

  - Identify future business strategy.

  - Develop implementation strategy.

  - Determine package fit/gap.

  - Design/confirm configuration standards.

  - Develop baseline configuration.

  - Perform integration testing.

  - Assist with User Acceptance testing.

  - Support production cut-over.

  - Provide post-implementation support.

- <u>Change Management Consultants</u>

  Change Management consultants are trained and experienced in Organizational Change Management theory and practice relating to the challenges of a large-scale EAS HRMS implementation. Anticipated tasks that will be performed include:

  - Assist in supporting the Communications Program.

  - Develop Change Management/Transition Management Strategy.

  - Assist with the development of risk mitigation strategies.

  - Rate organizational performance against critical success factors.

  - Identify and Implement Change Leadership Program.

  - Conduct Change Leadership Training.

− Assess the alignment of the project's vision and goals with the State's vision and goals.

− Plan and conduct organization transition program.

- Training Consultants

  Training consultants are trained and experienced in the development of training strategies and materials relating to the training needs of a large-scale EAS HRMS implementation. Anticipated tasks that will be performed include:

  − Develop Core Team training strategy.

  − Develop deployment education and training plan.

  − Develop deployment education materials.

  − Plan end-user training materials.

  − Conduct end-user training using 'train the trainer' approach.

(3) IT Consultants

IT consultants will be fully trained (application and database) technical specialists and programmers. Anticipated tasks that will be performed include:

- Assist security setup.

- Assist in application definition testing and design.

- Participate in the deliverables reviews as needed.

- Collect and analyze technical information about the existing systems.

- Collect and analyze technical information on/about the existing application environment.

- Collect and analyze technical information about system interfaces.

- Collect and analyze data file information.

- Participate in application design.

- Develop technical specifications.

- Collect and analyze information about any third party systems, as may be needed for specification creation.

- Code and test interfaces, conversions, adaptations, and modifications to the system.

- Provide infrastructure design and implementation services.
- Participate in status meetings.

4. Ongoing Technical Support Staffing

Exhibit V-4 represents the estimated effort to manage the IT EAS HRMS technology in a steady-state production environment. This estimate was derived using a synthesis of several staffing models, including IBM Outsourcing and a model developed by the IBM IT Infrastructure Consulting Practice. The values herein are estimates based upon the server population, user counts, and operating system complexity. These values are offered for purposes of estimating the level of effort required. Actual headcount requirements may vary based upon separation of duties, organizational, culture, and actual workload experienced in a post-EAS implementation environment.

Exhibit V-4: Ongoing Technical Support Staffing

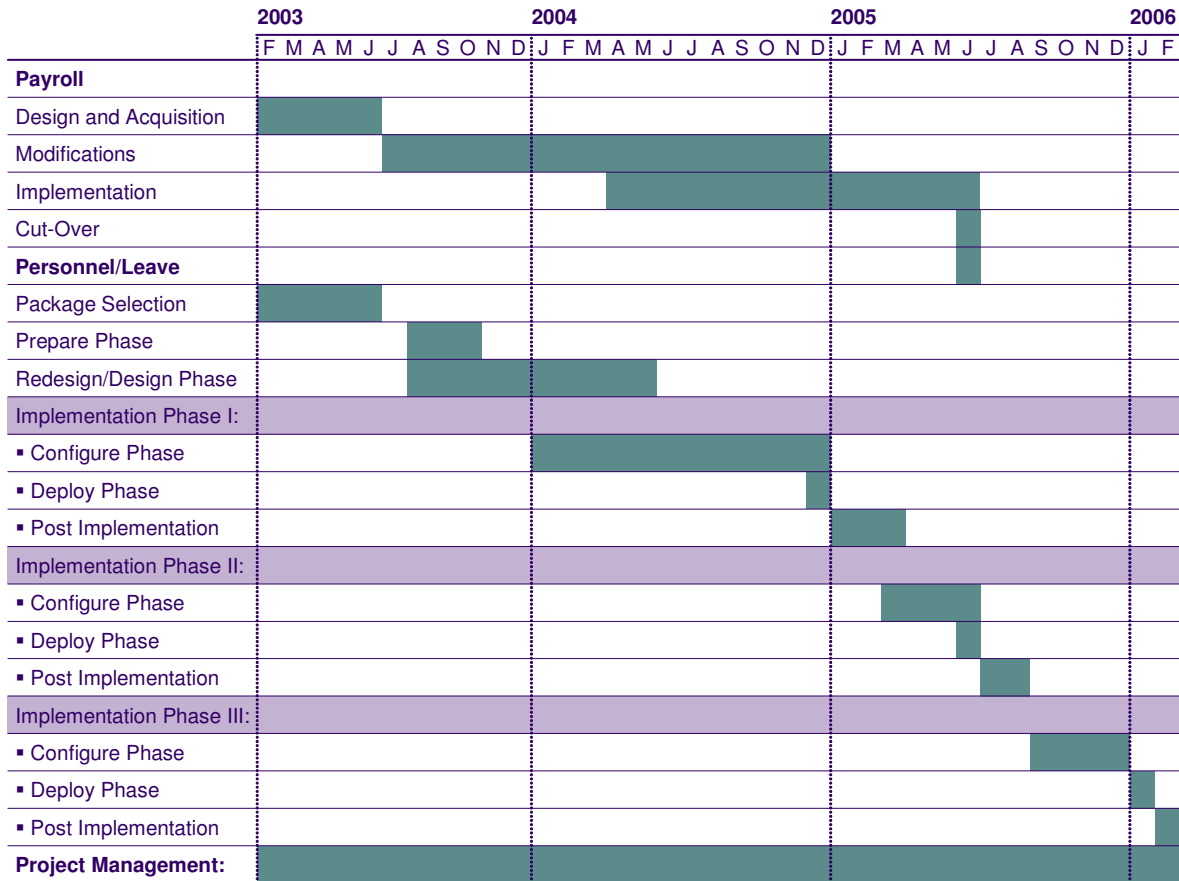| Steady State Labor	Year 1	Year 2	Year 3	Year 4	Year 5
Performance Management	0.19	0.18	0.18	0.17	0.16
Capacity Management	0.05	0.05	0.04	0.04	0.04
Operations	1.79	1.70	1.61	1.53	1.45
Unix Server Management	0.78	0.74	0.70	0.67	0.63
NT Server Management	0.58	0.55	0.53	0.50	0.47
EAS Architects	0.02	0.02	0.02	0.02	0.02
EAS Kernel and Admin	1.31	1.25	1.19	1.13	1.07
DBA	0.53	0.50	0.47	0.45	0.43
EAS Security	0.95	0.90	0.85	0.81	0.77
System Mgmt and Automation	0.38	0.36	0.34	0.32	0.31
Storage Management	0.46	0.43	0.41	0.39	0.37
Asset Management	0.06	0.06	0.05	0.05	0.05
Resource Management	0.37	0.35	0.34	0.32	0.30
Total:	**7.46**	**7.09**	**6.74**	**6.40**	**6.08**

VI. Estimated Schedule

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A. Project Timeline

The estimated timeline for Alternative 3 is illustrated in Exhibit VI-1.

Exhibit VI-1: Project Timeline

	2003 F M A M J J A S O N D	2004 J F M A M J J A S O N D	2005 J F M A M J J A S O N D	2006 J F
Payroll				
Design and Acquisition	████			
Modifications	░░████████	█████████████		
Implementation		░░░░░░░████	████████	
Cut-Over			░░░░░██	
Personnel/Leave				
Package Selection	████			
Prepare Phase	░░░░░██			
Redesign/Design Phase	░░░░░░░███	████		
Implementation Phase I:				
▪ Configure Phase		█████████		
▪ Deploy Phase		░░░░░░░░░░░█		
▪ Post Implementation			░███	
Implementation Phase II:				
▪ Configure Phase			░░░░███	
▪ Deploy Phase			░░░░░░░██	
▪ Post Implementation			░░░░░░░░░██	
Implementation Phase III:				
▪ Configure Phase			░░░░░░░░░░░██	
▪ Deploy Phase				█
▪ Post Implementation				░█
Project Management:	███████████	████████████	████████████	██

DYE MANAGEMENT GROUP, INC.

B. Activities for Payroll System Modification

1. Design and Acquisition

During the Design and Acquisition phase, detailed requirements and the conceptual design are completed. Proposals for completing the modifications are solicited and reviewed, and contracted personnel and/or companies are selected to assist with developing and implementing the modifications to current systems.

2. Modifications

Current systems are modified and tested during the Modification phase. As well, system and user documentation is prepared, and training and implementation plans are developed. This includes building or modifying database and other files, modifying programs and related job streams (JCL), and conducting unit, integration, stress, and customer acceptance tests for all system changes.

3. Implementation

During the Implementation phase, training is provided to system users. Appropriate changes to user documentation are distributed. Changes in user processes, procedures and forms are finalized and implemented, in coordination with system changes. Required changes to customer agency interfaces are implemented to adjust to changes in data content and/or format for those interfaces required by CSR/CB. Those system components which can be implemented immediately are transferred to production and made available to users.

4. Cut-Over

The final system components are transferred to production and made available to users during the Cut-Over phase. Transitional issues are identified and resolved as well, and a post-implementation review is conducted.

C. Activities for Personnel System Replacement

1. Package Selection

During the Package Selection phase, a software vendor and integrator will be selected based on the State of Washington's functional and technical requirements. In addition, Organizational Change Management consultants will begin to assist the State with a communications program, alignment of the project's vision and goals with the State's vision and goals, development of a sponsorship program, and risk mitigation strategies.

2. Prepare

The purpose of the Prepare phase is to understand and assess business strategy, critical processes, readiness for change, and the current information technology infrastructure and application portfolio, and to define strategies needed to implement the EAS.

3. Redesign/Design

During this phase of the project, the State will be assisted to leverage the selected EAS package by redesigning business processes and organization to align with the functionality to be implemented as part of Implementation Phase I and Implementation Phase II. The package-based solution and information technology infrastructures necessary to support the organizations will be designed. Basic package knowledge will be provided to the State's project team. Future business processes, the future business organization, and the design of the package solution will be documented.

4. Configure

The purpose of the Configure implementation phase is to develop, integrate, and test the final packaged application configuration as specified in the Redesign/Design phase. Training materials and documentation are also created for use in training and testing sessions, which are also a part of this phase.

5. Deploy

The Deploy implementation phase is for the purpose of moving the system into production and providing implementation and post-production support in compliance with the implementation strategy.

6. Post-Implementation

The Post-Implementation implementation phase will provide assistance to the State in resolving issues or problems that occur during the post-implementation period.

VII. Estimated Costs – Payroll System Modification

∎

A. Staffing

1. Assumptions

The assumptions employed when estimating staffing requirements are as follows:

- All technical project staffing will be from external sources at contractor rates.

- Contractor rates include expenses.

2. SPC ESTIMATE Professional

SPC ESTIMATE Professional is a statistically-based software package marketed by Software Productivity Center, Inc., which has been used successfully by HRISD to estimate previous projects. It employs Monte Carlo simulation to generate a set of estimates with different probabilities. Either a size- or effort-based approach can be utilized. For this project, a size-based approach was chosen. It employs the size of current programs – as measured by lines of code – and actual historical time and effort data from previous program modification efforts. SPC ESTIMATE Professional produces estimates for the following technical staffing categories:

- Project Managers

- Developers

SPC ESTIMATE Professional was executed for all subsystems. The resulting estimates were reviewed for reasonableness by a team of HRISD managers and staff familiar with the CSR/CB business requirements and with the historical work that has been performed on each subsystem. The team compared the complexity of previous work to that anticipated for CSR/CB and modified the SPC ESTIMATE Professional estimates when disparities were detected.

No historical information was available for the Data Warehouse subsystem. Resource estimates were developed based on input from HRISD staff and generally accepted industry estimating standards and practices.

Two rates were employed for costing purposes; project managers were estimated at $160/hour, all other resources at $95/hour. Estimated subsystem modification costs are displayed by subsystem in Exhibit VII-1.

Exhibit VII-1: Estimated Subsystem Modification Costs

Subsystem	Hours	Cost$	Total$
Payroll			
Generic Pay Feed	159	16,696	
Labor Load	147	20,588	
Automatic Warrant Cancellations	510	53,358	
Payroll Calculations	20,260	2,122,271	
Main Payroll Reporting	7,646	800,850	
Subsequent Payroll Reporting	12,447	1,303,816	
Deduction Reporting	498	52,142	
AFRS/OST Reporting	3,722	389,799	
Biennium Payroll Reporting	551	57,705	
Year End Reporting	429	44,933	4,862,158
Other			
Data Warehouse	1,613	170,688	170,688
Total:			**5,032,846**

B. Additional Staffing

Since the resource hours provided by SPC ESTIMATE Professional are limited to certain technical staffing categories, the additional resources needed by the project have been estimated separately. For the purposes of the Payroll System Modification portion of Alternative 3, these costs are estimated at 50 percent of the Additional Staffing costs for Alternative 1 as detailed in Appendix G.

C. External Quality Assurance

For the purposes of the Payroll System Modification portion of Alternative 3, these costs are estimated at 50 percent of the External Quality Assurance costs for Alternative 1 as detailed in Appendix G.

D. Facilities

Facilities costs are those costs associated with housing temporary project personnel over the project's lifecycle. For the purposes of the Payroll System Modification portion of Alternative 3, these costs are estimated at 50 percent of the facilities costs for Alternative 1 as detailed in Appendix G.

E. Equipment

The equipment costs include desktops for project staff, as well as the necessary network equipment and data line necessary to connect the desktops to the HRISD Local Area Network. For the purposes of the Payroll System Modification portion of Alternative 3, these costs are estimated at 50 percent of the Equipment costs for Alternative 1 as detailed in Appendix G.

F. DIS Charges

DIS change costs are those associated with the additional demand for computer processing time and data storage. For the purposes of the Payroll System Modification portion of Alternative 3, these costs are estimated at 50 percent of the DIS Charges costs for Alternative 1 as detailed in Appendix G.

G. Operations

Operational costs are those associated with the post-implementation operation over a certain period of time. For the purposes of this study, the operational period has been designated as fiscal years 2005 through 2013. For the Payroll System Modification portion of Alternative 3, these costs are estimated at 50 percent of the Operations costs for Alternative 1 as detailed in Appendix G.

VIII. Estimated Costs
Personnel System Replacement – Phase I

■

A. Software

Software costs are those costs associated with acquiring the Personnel and Leave portions of an EAS HRMS package. For the purposes of the Personnel System Replacement portion of Alternative 3, these costs are estimated at 75 percent of the Facilities costs for Alternative 2 – Phase I as detailed in Appendix H.

B. Package Selection Staffing

Package selection staffing costs consist of the services of an outside consultant to assist the State of Washington with this task.

Package selection staffing cost estimates are based on a "blended rate" defined as the average rate of all project participants from a particular source; i.e.., the State of Washington or the Integrator. The assumption employed when estimating State staffing costs are as follows:

- All technical project staffing will be from external sources at contractor rates.
- Contractor rates include expenses.
- All functional project staffing is based on $50,000 salary plus 30 percent benefits.
- Project management is estimated at double the staffing rate.

The estimated package selection staffing costs are displayed in Exhibit VIII-1.

Exhibit VIII-1: Estimated Package Selection Staffing Costs

Category	FTE's	Rate$[1]	Hours	Cost$	Total$
State of Washington:					
Project Manager	1	62.50	867	54,200	54,200
Integrator:					
Project Management	1	200	900	180,000	
Package Selection Consultant	.75	200	650	130,000	
Change Management Consultant	.50	200	450	90,000	400,000

Category	FTE's	Rate$[1]	Hours	Cost$	Total$
Travel Expenses @15%	n/a	n/a	n/a	60,000	60,000
Total:					**514,200**

[1] Blended rate

C. Project Staffing

Project staffing costs include the external integrator and travel expenses, internal technical personnel, and internal functional personnel. Integrator costs include interface development and current/historical data conversion. Cost estimates are based upon prior package implementation experience. It has been estimated that 13% of the total integrator's hours will be for developing interfaces and 14% will be for data conversion; however, once detailed interface and data conversion requirements are finalized, these estimates may require modification.

Project staffing cost estimates are based on a "blended rate" defined as the average rate of all project participants from a particular source; i.e.., the State of Washington or the Integrator. The assumptions employed when estimating State staffing costs are as follows:

- All technical project staffing will be from external sources at contractor rates.

- Contractor rates include expenses.

- All functional project staffing is based on $50,000 salary plus 30 percent benefits.

- Project management is estimated at double the staffing rate.

The estimated project staffing costs are displayed in Exhibit VIII-2.

Exhibit VIII-2: Project Staffing Costs

Category	FTE's	Rate$[1]	Hours	Cost$	Total$
State of Washington:					
Project Management	1	62.50	3,360	210,000	
Functional Subject Matter Experts	9.5	31.25	32,160	1,005,000	
IT Consultants – Lead	1	125.00	3,360	420,000	
IT Consultants – Staff	5	95.00	16,800	1,596,000	3,231,000
Integrator:					
Project Management	2.0	175.00	6,780	1,186,500	
Functional Consultants:					
–Human Resources	1.7	175.00	5,960	1,043,000	
–Benefits	1.0	175.00	3,360	588,000	
–Change Management	1.7	175.00	5,800	1,015,000	
–Training	1.7	175.00	5,800	1,015,000	
IT Consultants	4.5	175.00	15,640	2,737,000	7,584,500
Travel Expenses @ 15%	n/a	n/a	n/a	1,137,675	1,137,675
Total:					**11,953,175**

[1] Blended rate

D. External Quality Assurance

For the purposes of the Personnel System Replacement portion of Alternative 3, these costs are estimated at 50 percent of the External Quality Assurance costs for Alternative 2 – Phase I as detailed in Appendix H.

E. Facilities

Facilities costs are those costs associated with housing temporary project personnel over the project's lifecycle. For the purposes of the Personnel System Replacement portion of Alternative 3, these costs are estimated at 50 percent of the Facilities costs for Alternative 2 – Phase I as detailed in Appendix H.

F. Equipment

The equipment costs include desktops for project staff, as well as the necessary network equipment and data line necessary to connect the desktops to the HRISD Local Area

Network. For the purposes of the Personnel System Replacement portion of Alternative 3, these costs are estimated at 50 percent of the Equipment costs for Alternative 2 – Phase I as detailed in Appendix H.

G. DIS Charges

DIS change costs consist of additional demand for data storage and computer processing during the development period, and start-up costs for the development project.

For the purposes of the Personnel System Replacement portion of Alternative 3, additional demand costs are estimated at 50 percent of the DIS Charges costs for Alternative 2 – Phase I as detailed in Appendix H.

The start-up costs include the hardware, database/middleware software, and staff training associated with the All UNIX option. For the purposes of the Personnel System Replacement portion of Alternative 3, start-up costs are estimated at 100 percent of the start-up costs for Alternative 2 – Phase I as detailed in Appendix H.

The DIS Charges for Personnel system Replacement, Phase I are summarized in Exhibit VIII-3 below.

Exhibit VIII-3: DIS Charges

Description	Basis	Cost$	Total$
Data storage and processing charges	18 mos.	7,500/mo	135,000
Start-up costs			2,236,840
Total			**2,371,840**

H. Operations

Operations costs are those associated with the post-implementation operation over a certain period of time. For the purposes of this study, the operational period has been designated as beginning in FY2004 for some costs, and running through FY2013.

Annual EAS HRMS software maintenance fees have been estimated at 20% of the EAS HRMS package purchase price. Software maintenance fees are due and payable upon the initial loading of the software and then on an annual basis thereafter, and provide access to the vendor's help lines and all patches, upgrades and accompanying increases in functionality developed by the vendor.

Major EAS HRMS software releases have been estimated to occur every three years. The release is provided under the EAS HRMS software maintenance contract. The State is expected to need external consultant support to assist it with major release implementations.

DIS charges include ongoing operation and support of the hardware and systems software, as well as charges associated with network connectivity, data storage and data back-up.

The estimated operational costs are displayed in Exhibit VIII-4.

Exhibit VIII-4: Estimated Operational Costs

Description	Basis	Cost$	Total$
EAS HRMS software maintenance	10 yrs.	750,000/yr.	7,500,000
EAS HRMS release consultants	Every 3 yrs.	750,000/yr.	2,250,000
DIS EAS HRMS support charges	10 yrs.	variable	18,002,707
Total:			**27,752,707**

IX. Estimated Costs – Phase II

■

A. Project Staffing

Project staffing costs include the external integrator and travel expenses, internal technical personnel, and internal functional personnel. Integrator costs include interface development and current/historical data conversion. Cost estimates are based upon prior package implementation experience. Once detailed interface and data conversion requirements are finalized, these estimates may require modification.

Project staffing cost estimates are based on a "blended rate" defined as the average rate of all project participants from a particular source; i.e.., the State of Washington or the Integrator. The assumptions employed when estimating State staffing costs are as follows:

- All technical project staffing will be from external sources at contractor rates.
- Contractor rates include expenses.
- All functional project staffing is based on $50,000 salary plus 30 percent benefits.
- Project management is estimated at double the staffing rate.

The estimated project staffing costs are displayed in Exhibit IX-1.

Exhibit IX-1: Project Staffing Costs

Category	FTE's	Rate$[1]	Hours	Cost$	Total$
State of Washington:					
Project Management	1	62.50	960	60,000	
Functional Subject Matter Experts	11	31.25	10,560	330,000	
IT Consultants – Lead	1	125	960	120,000	
IT Consultants – Staff	5	95	4,800	456,000	**966,000**
Integrator:					
Project Management	1	175	648	113,400	
Functional Consultants					
–Human Resources	1	175	520	91,000	
–Benefits	1	175	520	91,000	

Category	FTE's	Rate$[1]	Hours	Cost$	Total$
–Change Management	1	175	520	91,000	
–Training	1	175	520	91,000	
IT Consultants	3	175	2,840	497,000	**974,400**
Travel Expenses@15%				146,160	1,120,560
Total:					**2,086,560**

[1] Blended Rate

B. External Quality Assurance

The estimated external quality assurance costs for Phase II are based on 50% of the Alternative 2 – Phase II estimate which results in a $15,638 per month cost. Alternative 3 – Phase II spans 6 months with a one month overlap with Phase I. Therefore, the five months of external quality assurance for Phase II is estimated at $78,190. Travel expenses @ 15% are estimated at $11,728.

C. Facilities

Facilities costs are those costs associated with housing a maximum of 15 temporary project personnel at any given time over the project's lifecycle. Desks, chairs and telephones were acquired in Phase I, limiting Phase II costs to office space, telephone service and miscellaneous supplies. The estimated facilities costs are displayed in Exhibit IX-2.

Exhibit IX-2: Estimated Facilities Costs

Description	Basis	Cost$	Total$
Office Space	2,625/sqft/5 mos.	20/sqft/yr.	21,875
Telephone Service	15@5 mos.	36/mo.	2,700
Miscellaneous Supplies	n/a	n/a	750
Total:			**25,325**

D. Equipment

Desktops and network equipment were acquired during Phase I. This limits equipment charges for Phase II to the one-half the charges for the data line connecting the desktops to the HRISD Local Area Network. The estimated equipment costs are displayed in Exhibit IX-3.

Exhibit IX-3: Estimated Equipment Costs

Description	Basis	Cost$	Total$
T1 Communications Link	5 mos.	500/mo	2,500
Total:			**2,500**

E. DIS Charges

DIS change costs are those associated with the additional demand for data storage and computer processing charges during the development period. The estimated DIS changes are displayed in Exhibit IX-4.

Exhibit IX-4: Estimated DIS Charges Costs

Description	Basis	Cost$	Total$
Processing charges	5 mos.	7,500/mo.	37,500
Total:			**37,500**

X. Estimated Costs – Phase III

■

A. Project Staffing

Project staffing costs include the external integrator and travel expenses, internal technical personnel, and internal functional personnel. Integrator costs include interface development and data conversion. Cost estimates are based upon prior package implementation experience. Once detailed interface and data conversion requirements are finalized, these estimates may require modification.

Project staffing cost estimates are based on a "blended rate" defined as the average rate of all project participants from a particular source; i.e.., the State of Washington or the Integrator. The assumptions employed when estimating State staffing costs are as follows:

- All technical project staffing will be from external sources at contractor rates.

- Contractor rates include expenses.

- All functional project staffing is based on $50,000 salary plus 30 percent benefits.

- Project management is estimated at double the staffing rate.

The estimated project staffing costs are displayed in Exhibit X-1.

Exhibit X-1: Project Staffing Costs

Category	FTE's	Rate$[1]	Hours	Cost$	Total$
State of Washington:					
Project Management	1	62.50	820	51,250	
Functional Subject Matter Experts	10	31.25	10,560	330,000	
IT Consultants	3	31.25	3,600	112,500	493,750
Integrator:					
Project Management	.4	175	364	63,700	
Functional Consultants					
–Human Resources	.5	175	520	91,000	
–Benefits	.5	175	520	91,000	
–Change Management	.4	175	440	77,000	
–Training	.1	175	80	14,000	

Category	FTE's	Rate$[1]	Hours	Cost$	Total$
IT Consultants	1.3	175	1,330	232,750	
Travel Expenses@15%				85,418	654,868
Total:					**1,148,618**

[1] Blended Rate

B. Facilities

Facilities costs are those costs associated with housing a maximum of 30 temporary project personnel at any given time over the Phase's lifecycle. Desks, chairs and telephones were acquired in Phase I, limiting Phase III costs to office space, telephone service and miscellaneous supplies. The estimated facilities costs are displayed in Exhibit X-2.

Exhibit X-2: Estimated Facilities Costs

Description	Basis	Cost$	Total$
Office Space	5250/sqft/6 mos.	20/sqft/yr.	52,500
Telephone Service	30@6 mos.	36/mo.	6,480
Miscellaneous Supplies	n/a	n/a	1,500
Total:			**60,480**

C. Equipment

Desktops and network equipment were acquired during Phase I. This limits equipment charges for Phase III to the charges for the data line connecting the desktops to the HRISD Local Area Network. The estimated equipment costs are displayed in Exhibit X-3.

Exhibit X-3: Estimated Equipment Costs

Description	Basis	Cost$	Total$
T1 Communications Link	6 mos.	1,000/mo	6,000
Total:			**6,000**